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EXAMINER	
TRUJILLO, JAMES K	
ART UNIT	**PAPER NUMBER**
2116	

DATE MAILED: 06/30/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/992,446	GILBERT ET AL.	
	Examiner	Art Unit	
	James K. Trujillo	2116	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *15 April 2005*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-13,16-19 and 34-36* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-13,16-19 and 34-36* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date *011005*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

1. It is hereby acknowledged that the following papers have been received and placed of record in the file: Amendment filed 4/15/05, Non-Responsive Amendment filed 3/18/05, IDS filed 1/10/05.

2. Claims 1-13,16-18 and 34-36 are presented for examination.

Claim Rejections - 35 USC § 112

3. The following is a quotation of the first paragraph of 35 U.S.C. 112:

> The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

4. Claim 34 is rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. Specifically, applicant has added claim 34, which recites, "wherein the storage device is hot-swappable". It appears upon reading the specification that there is no support for a storage device that is hot-swappable. It appears that there is only support in the specification for a card that is hot-swappable on which the storage device resides, but not the storage device itself.

Claim Rejections - 35 USC § 102

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

6. Claims 1-3, 6-7, and 9-12 are rejected under 35 U.S.C. 102(e) as being anticipated by Bouchier et al., U.S. Patent 6,725,317 (cited in previous office action).

7. As to claim 1, Bouchier teaches a device coupled to an I/O board of a computer system, the device (the device is coupled to an I/O board, col. 2, lines 12-14 and figure 1) comprising:

a. a first connector (backplane, also known as a center plane, connecting to the fabric, col. 2 lines 14-16 and figure 3);

b. a bus bridge (PA 301, col. 7 lines 55-57 and col. 8 line 1-6) coupled to the first connector;

c. a storage controller (bus arbiter 317 is controls data from storage devices 308, 310, 307, and 311, figure 3 and col. 7 lines 62-64) coupled to the bus bridge; and

d. a bootable storage device (PDH flash memory 307, figure 3) connected to the storage controller, wherein the bootable storage device is operable to boot (PDH flash memory contains boot code for booting the OS, col. 9 lines 1-10) a domain in a multiple domain computer system (wherein a partition is a domain of the multiple partition system, col. 2 lines 28-33).

8. As to claim 2, Bouchier taught the device according to claim 1 as described above. Bouchier further teaches an I/O controller (as part of the I/O described in col. 2 lines 1-27 and depicted in figure 3) coupled the storage controller and a network interface (also with PA 301 to

connect to the fabric, figure 3 and Bouchier discloses that data is exchanged between memory and networks, col. 2 lines 19-24). Specifically, PA 301 as disclosed by Bouchier connects I/O to the CPUs and memory devices of a domain. Bouchier connects different processors together through the fabric and exchanges data to networks. Again PA 301 of Bouchier must inherently have an interface for the network, wherein an interface is an electrical boundary between two parts of the system through which information is conveyed.

9. As to claim 6, Bouchier taught the device according to claim 2 as described above. Bouchier further teaches wherein the I/O controller is coupled to the bus bridge (the I/O controller of Bouchier is part the bus bridge PA 301).

10. As to claim 7, Bouchier taught the device according to claim 1 as described above. Bouchier further teaches a storage port coupled to the storage controller (col. 7 lines 62-64). The storage controller of Bouchier read and writes data to the PDH memory therefore it must inherently have a storage port.

11. As to claim 9, Bouchier taught the device according to claim 1 as described above. Bouchier further teaches a memory (PDH memory) coupled to the first connector, wherein the memory is configured to configuration data for the device (wherein boot code is interpreted to be configuration data, col. 9 lines 1-10).

12. Regarding claim 10, Bouchier taught a computer system comprising:

a. a center plane (backplane 114, col. 2 lines 14-16 and figure 3);

b. one or processor boards coupled to the center plane (CPUs 302, figure 1);

c. one or more I/O boards coupled to the center planes (plurality of I/O devices labeled I/O figure 1); and

d. a device connected to a given I/O board of the one or more I/O boards via a first connector, the device (figure 3) comprising:

i. a storage controller (bus arbiter 317 is controls data from storage devices 308, 310, 307, and 311, figure 3 and col. 7 lines 62-64);

ii. a bus bridge coupled between the given I/O board and the storage controller (PA 301, col. 7 lines 55-57 and col. 8 line 1-6);

iii. a storage device coupled to the storage controller and configured to store boot code operable to boot a domain in a multiple domain computer system (PDH flash memory 307, figure 3, PDH flash memory contains boot code for booting the OS, col. 9 lines 1-10 and wherein a partition is a domain of the multiple partition system, col. 2 lines 28-33).

13. Regarding claims 10-11 and 14-19, Bouchier taught the claimed device which is used in a computer system. Therefore, Bouchier also taught the claimed computer system.

Claim Rejections - 35 USC § 103

14. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

15. Claims 4 and 5 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bouchier in view of Comer, "Computer Networks and Internets".

16. As to claim 4, Bouchier taught the device according to claim 2 as described above. Bouchier must have a network interface in order exchange data between memory and networks through an I/O device having an I/O controller. Bouchier fails to disclose the details of the his network interface and therefore does not explicitly disclose wherein in the network interface ***comprises an Ethernet transceiver*** coupled to the I/O controller.

Comer teaches a device having a network interface (network interface card, section 9.7) comprising an Ethernet transceiver (the transceiver for Ethernet connection, section 9.7). Comer teaches that Ethernet hardware is used to transfer data between computers (section 7.6.2). Comer further teaches that Ethernet provides the advantage of having high bandwidth (first paragraph page 80).

It would have been obvious to one of ordinary skill in the art, having the teachings of Bouchier and Comer before them at the time the invention was made, to implement the network interface of Bouchier to include an Ethernet transceiver taught by Comer, in order to obtain a network connection.

One of ordinary skill in the art would have been motivated to make this combination in order to achieve a high bandwidth for transferring data between computer systems in view of the teachings of Comer.

17. As to claim 5, Bouchier together with Comer taught the device according to claim 4 as described above. Comer further teaches an Ethernet connector coupled to the Ethernet transceiver (BNC connector, section 9.7).

18. Claims 8 and 35-36 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bouchier.

19. As to claim 8, Bouchier taught the device according to claim 1 as described above. Bouchier further teaches a primary card including the first connector and the bus bridge (col. 4 lines 41-46, figures 2 and 3). Specifically, Bouchier discloses that the storage controller and the bootable storage devices are all on a single card. The single card of Bouchier contains six different subsystems (figure 3 and corresponding text).

Therefore, Bouchier does not disclose a second connector coupled between the bus bridge and the storage controller and configured as a secondary card including the storage controller and the bootable storage device, wherein the secondary card further comprises a third connector coupled to the second connector, wherein the bus bridge and the storage controller are coupled through the third connector.

The examiner takes official notice of the means and motivation necessary to implement modular system design within a computer system. Modular system design as is known to those of ordinary skill in the art. It is well known in the computer arts to separate coupled subsystems having different functionality onto different modules. Doing so allows replacement of certain components without having to replace all of the components, such as in the case of a failure to a component or an upgrade in a component. This reduces overall costs of maintenance and parts.

Bouchier shows six different subsystems. In Bouchier, three subsystems have functionality with the processors, which include system processors 302, system memory and bus bridge (PA 301). The other three subsystem of Bouchier have functionality to access the

processor dependent hardware 303 using cell microcontroller 304 and storage controller (bus arbiter 317).

It would have been obvious to one of ordinary skill in the art at the time of the invention having the teachings of Bouchier and the knowledge of modular system design at the time of the invention, to modify Bouchier by implementing a second connector coupled between the bus bridge and the storage controller; and configured as a secondary card including the storage controller and bootable storage device and the secondary card further comprising a third connector (necessitated by the second connector) coupled to the second connector, wherein the bus bridge and the storage controller are coupled through the third connector.

As modified, Bouchier would have a primary card with system processors, system memory and the bus bridge. The secondary card of Bouchier would have the cell microcontroller, the processor dependent hardware and the storage controller. One of ordinary skill in the art would have been motivated to make the modification to reduce cost in maintenance and parts.

20. Regarding claims 35 and 36, Bouchier teaches a device coupled to an I/O board (I/O figure 1) of a computer system, the device comprising:

a. a first connector (backplane, also known as a center plane, connecting to the fabric, col. 2 lines 14-16 and figure 3);

b. a bus bridge coupled (PA 301, col. 7 lines 55-57 and col. 8 line 1-6) to the first connector;

c. a storage controller (inherent in order to access external disks through I/O, col. 2, lines 19-22) coupled to the bus bridge; and

d. a bootable storage device (a device necessary for obtaining an OS in order to create a domain) connected to the storage controller, wherein the bootable storage device is operable to boot a domain (an OS from a partition is a boot domain as depicted in figure 1) in a multiple domain computer system (multiple partitions, figure 1);

Bouchier does not explicitly disclose wherein the storage device is a disk drive. However, Bouchier teaches that an OS is obtained for a device (col. 5, lines 8-13). Further the OS must be obtained externally because each device may have its own copy or share a copy of the OS with another device (col. 5, lines 14-20). Bouchier also teaches that controllers are available to obtain data from external disks (col. 2, lines 19-25).

It is well known in the art that disk drives are storage devices that are bootable storage devices (contain an OS that is loaded into the system). Disk drives have a large storage capacity and are inexpensive.

It would have been obvious to one of ordinary skill in the art, having the teachings of Bouchier and the well known fact that disk drives are bootable storage device at the time the invention was made, to modify Bouchier by using a disk drive as the bootable storage device. One ordinary skill in the art would have been motivated to make the modification because disk drives are inexpensive and have a large storage capacity.

21. Regarding claim 36, claim 36 is rejected for the same reason as claim 35. Specifically, a disk drive is inherently a random access memory disk unit.

22. Claims 13 and 34 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bouchier in view of Dellacona, U.S. Patent 6,799,224.

23. Regarding claim 13, Bouchier teaches a computer system, comprising:

a. a center plane (backplane, also known as a center plane, connecting to the fabric, col. 2 lines 14-16 and figure 3);

b. one or more processor boards coupled to the center plane (CPUs 302, figure 1);

c. one or more I/O boards coupled to the center plane (plurality of I/O devices labeled I/O figure 1); and

d. a device (external disks, col. 2, lines 19-22) connected to a given I/O board of the one or more I/O boards via a first connector (at the I/O, at the I/O BP figure 2), the device comprising:

i. a storage controller (not shown but inherent in order to access an external disk);

ii. a bus bridge (inherent for communications to boot the OS using PCI, ISA or SCSI formats, col. 2, lines 10-12 and col. 5, lines 45-57) coupled between the given I/O board and the storage controller;

iii. a storage device (external disk) coupled to the storage controller and configured to store boot code operable to boot a domain in multiple domain computer system (in order to boot an OS, col. 2, lines 10-12);

e. wherein the device is configured as a primary card (cell, figure 1) and a secondary card (where the external disk and supporting circuitry would reside, col. 2 lines 10-22), the primary card comprising:

i. a second connector coupled between the bus bridge and the storage controller (inherent in order to connect any device such as an external disk to the system through the I/O); and

ii. the secondary card including the storage controller and the storage device (external disk), the secondary card further comprising:

(1) a third connector connected to the second connector, wherein the bus bridge and the storage controller are coupled through the third connector (the third connector is inherent in order to couple the storage controller to the external disk for accessing the OS and other data).

Bouchier does not explicitly disclose wherein the secondary card is hot swappable. However, Bouchier discloses that his system uses hot swappable components (col. 14 lines 40-49).

Dellacona teaches a system wherein a storage device is hot swappable (col. 4 lines 37-39). Dellacona teaches a system in the same field of endeavor as that of Bouchier in that both systems use external storage devices for accessing data . It appears that the feature of having hot swappable storage device in Dellacona provides the advantage of being able change the storage device without having to shut down the system.

It would have been obvious to one of ordinary skill in the art, having the teachings of Bouchier and Dellacona before them at the time the invention was made, to modify the storage device Bouchier by making it a hot swappable as taught by Dellacona. One of ordinary skill in the art would have been motivated to make the modification in order to obtain the advantage of being able to change the storage device without having to shut down the system.

24. Regarding claim 34, Bouchier teaches a device coupled to an I/O board (I/O figure 1) of a computer system, the device comprising:

a. a first connector (backplane, also known as a center plane, connecting to the fabric, col. 2 lines 14-16 and figure 3);

b. a bus bridge coupled (PA 301, col. 7 lines 55-57 and col. 8 line 1-6) to the first connector;

c. a storage controller (inherent in order to access external disks through I/O, col. 2, lines 19-22) coupled to the bus bridge; and

d. a bootable storage device (an external disk necessary for obtaining an OS in order to create a domain) connected to the storage controller, wherein the bootable storage device is operable to boot a domain (an OS from a partition is a boot domain as depicted in figure 1) in a multiple domain computer system (multiple partitions, figure 1);

Bouchier does not explicitly disclose wherein the storage device is hot swappable.

Dellacona teaches a system wherein a storage device is hot swappable (col. 4 lines 37-39). Dellacona teaches a system in the same field of endeavor as that of Bouchier use external storage devices for accessing data. It appears that the feature of having hot swappable storage device in Dellacona provides the advantage of being able change the storage device without having to shut down the system.

It would have been obvious to one of ordinary skill in the art, having the teachings of Bouchier and Dellacona before them at the time the invention was made, to modify the storage device Bouchier by making it a hot swappable as taught by Dellacona. One of ordinary skill in

the art would have been motivated to make the modification in order to obtain the advantage of being able to change the storage device without having to shut down the system.

Response to Arguments

25. All rejections of claim limitations as filed prior to Amendment dated 4/18/05 not argued in their entirety or substantively in the response to the prior Office action have been conceded by Applicant and the rejections are maintained from henceforth.

26. Applicant's arguments filed 4/15/05 have been fully considered but they are not persuasive.

27. Applicants argue in substance that bus arbiter of Bouchier is not storage controller. The examiner disagrees. The bus arbiter of Bouchier, as described in col. 7, lines 62-64 "arbitrates request from PA 301 and CM 304 to read or write into PDH memory space". Thus the bus arbiter of Bouchier is a storage controller in that it controls reads and writes to a storage device, namely the PDH Memory.

Applicant further argues that in one embodiment of the Applicant's invention the controller is a SCSI controller, which is in stark contrast to the bus arbiter of Bouchier. However the feature of a SCSI controller is not claimed. In response to applicant's argument that the references fail to show certain features of applicant's invention, it is noted that the features upon which applicant relies (i.e., SCSI controller) are not recited in the rejected claim(s). Although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993).

Conclusion

28. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to James K. Trujillo whose telephone number is (571) 272-3677. The examiner can normally be reached on M-F (7:30 am - 5:00 pm) First Friday Off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Lynne Browne can be reached on (571) 272-3670. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

LYNNE H. BROWNE
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2100

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James Trujillo
June 24, 2005